

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1- 70. (canceled).

71. (currently amended): An information-providing method for providing information online from an information-providing server in response to a request from a client ~~which~~ has an image-forming apparatus to which a cartridge is replaceably attached ~~replaceably, to a~~ cartridge having a memory element storing an ID of the cartridge and a URL of the information-providing server, the method comprising the steps of:

reading the cartridge ID and the URL from the memory element of the cartridge at the client;

accessing the information-providing server from the client by using the read URL;

transmitting the read cartridge ID from the client to the information-providing server;

transmitting a web page according to the transmitted cartridge ID, from the server to the client, the web page containing a plurality of thumbnail images corresponding to a plurality of sample printing data;

~~reading~~ acquiring a first resource information in connection with a resource of the client from a storage resource in the client;

~~acquiring a second resource~~ printing environment ~~information which is in connection~~

~~with a resource of the image-forming apparatus and read from a storage of resource from the~~
image-forming apparatus at the client;

transmitting the read printing information from the client~~including the first resource~~
~~information and the second resource information and indicating a printing environment to the~~
information-providing server;

displaying the transmitted web page at the client;

inputting into the client a user's selection of one of the thumbnail images displayed on
the web page;

displaying a set of printer properties and printing medium appropriate on the basis of the
transmitted printing environment information and the selected thumbnail image at the client;

selecting a printing mode and a printing medium desired by a user based on the displayed
set of printer properties and the displayed printing medium at the client;

creating printing data on the basis of the selected printing mode and the selected printing
medium at the server;

transmitting the printing data, which is to be supplied to the image-forming apparatus,
from the server to the client ~~on the basis of the information indicating a printing environment~~
~~which is transmitted from the client~~;

supplying the printing data received from the information-providing server, to the image-
forming apparatus from the client~~as is~~; and

processing the printing data received from the information-providing server via the client
to perform printing.

72. (currently amended): The information-providing method according to claim 71, wherein ~~the cartridge is provided with a memory element, an ID of the cartridge is stored in the memory element of the cartridge, and~~ the information-providing server has ~~thea~~ a web page corresponding to the cartridge ID ~~and for providing sample printing data~~, the method further comprising:

~~reading the ID of the cartridge from the memory element of the cartridge, and~~

automatically accessing the web page corresponding to the cartridge ID ~~of the cartridge~~ which is in the memory element of the cartridge and has been read by the image-forming apparatus.

73. (currently amended): The information-providing method according to claim ~~69 or~~ 71, wherein ~~the cartridge is provided with a memory element, and a URL for the information-providing server and a password for permitting access to the information-providing server by the client are stored in the memory element~~, the method further comprising:

~~reading the URL from the memory element of the cartridge,~~

~~using the URL to access the information-providing server indicated by the URL,~~

reading the password from the memory element of the cartridge at the client, and

transmitting the password inside the memory element of the cartridge, which has been read by the image-forming apparatus, to the server in response to an inquiry sent from the information-providing server, thereby connecting to the server.

74. (previously presented): The information-providing method according to claim 73, wherein a range of permitting the access in the information-providing server is set to a range which is different depending on the password.

75. (canceled).

76. (currently amended): A system for providing information online from an information-providing server in response to a request from a client which~~who~~ has an image-forming apparatus to which a cartridge is replaceably attached~~replaceably to a cartridge~~, the cartridge having a memory element storing an ID of the cartridge and a URL of the information-providing server, the system comprising:

the client configured to read the cartridge ID and the URL from the memory element of the cartridge;

the client further configured to access the information-providing server by using the read URL;

the client further configured to transmit the read cartridge ID to the information-providing server;

the information-providing server configured to transmit a web page according to the transmitted cartridge ID, the web page containing a plurality of thumbnail images corresponding to a plurality of sample printing data;

the client further configured to read printing environment information from a storage of

the image-forming apparatus;

the client further configured to transmit the printing environment information indicating
a printing environment to the information-providing server;

the client further configured to display the transmitted web page;

the client further configured to acquire a user's selection of one of the thumbnail images
displayed on the web page;

the client further configured to display a set of printer properties and printing medium
appropriate on the basis of the transmitted printing environment information and the selected
thumbnail image;

the client further configured to acquire a printing mode and a printing medium desired by
a user based on the displayed set of printer properties and the displayed printing medium;

the information-providing server further configured to create printing data on the basis of
the selected printing mode and the selected printing medium;

the information-providing server further configured to transmit the printing data, which
is to be supplied to the client on the basis of the information indicating a printing environment
which is transmitted from the client;

the client further configured to supply the printing data received from the information-
providing server to the image-forming apparatus as is; and

the image-forming apparatus configured to process the printing data received from the
information-providing server via the client to perform printing;

wherein the information indicating a printing environment being information related to

~~both resources of the image-forming apparatus and the client.~~

77. (canceled).

78. (currently amended): A computer program product for providing information online from an information-providing server in response to a request from a client ~~which~~^{who} has an image-forming apparatus to which a cartridge is replaceably attached~~replaceably to a cartridge,~~ the cartridge having a memory element storing an ID of the cartridge and a URL of the information-providing server, the computer program product~~method~~ comprising ~~the steps that:~~

a computer readable memory storing program codes for causing the client to read the cartridge ID and the URL from the memory element in the cartridge;

a computer readable memory storing program codes for causing the client to access the information-providing server by using the read URL;

a computer readable memory storing program codes for causing the client to transmit the cartridge ID to the information-providing server;

a computer readable memory storing program codes for causing the information-providing server to transmit a web page according to the transmitted cartridge ID, to the client, the web page containing a plurality of thumbnail images corresponding to a plurality of sample printing data;

a computer readable memory storing program codes for causing the client to read printing environment information from a storage of the image-forming apparatus;

a computer readable memory storing program codes for causing the client to transmit the printing environment information ~~indicating a printing environment~~ to the information-providing server;

a computer readable memory storing program codes for causing the client to display the transmitted web page;

a computer readable memory storing program codes for causing the client to acquire a user's selection of one of thumbnail images displayed on the web page;

a computer readable memory storing program codes for causing the client to display a set of printer properties and printing medium appropriate on the basis of the transmitted printing environment information and the selected thumbnail image;

a computer readable memory storing program codes for causing the client to acquire a printing mode and a printing medium desired by a user based on the displayed set of printer properties and the displayed printer medium;

a computer readable memory storing program codes for causing the information-providing server to create printing data on the basis of the selected printing mode and the selected printing medium;

a computer readable memory storing program codes for causing the information-providing server to transmit the printing data, which is to be supplied to the image-forming apparatus; ~~to the client on the basis of the information indicating a printing environment which is transmitted from the client;~~

a computer readable memory storing program codes for causing the client to supply the

printing data received from the information-providing server to the image-forming apparatus ~~as is~~;
and

a computer readable memory storing program codes for causing the image-forming apparatus ~~information-providing server~~ to process the printing data received from the information-providing server via the client to perform printing;

~~wherein the information indicating a printing environment is information related to both resources of the image-forming apparatus and the client.~~

79 - 82 (canceled).

83. (currently amended): A system which uses a host apparatus and image-forming apparatus that are connected to each other and a server to which the host apparatus is communicably connected, comprising:

a replaceable cartridge with a memory element is attached to the image-forming apparatus;

first information including a URL for the server and a cartridge type are stored in the memory element of the cartridge;

the image-forming apparatus comprises a first memory region for storing second information in connection with a printer firmware ~~first computer program in regard to image forming~~ and a first list of types of cartridges suitable for use, a ~~first~~ reading component for reading the first information from the memory element of the cartridge, a first determining

component for determining whether the cartridge type in the first information is contained in the first list, a first transmitting~~second-reading~~ component for reading the second information from the first memory region and transmitting the first information and the second information to the host apparatus if it is determined that the cartridge type is not in the first list; and

the host apparatus comprises a receiving component for receiving the first information and the second information, a second memory region for storing third information~~second program-type information~~ in connection with a type of printer driver~~second-computer program~~ in regard to driving the image-forming apparatus, a second~~first~~ determining component for determining whether an update of the printer firmware~~first-computer program~~ is necessary based on the cartridge type in the first information and the second information, a third~~second~~ determining component for determining whether an update of the printer driver~~second-computer program~~ is necessary based on the cartridge type in the first information and the third~~second~~ program-type information if as a result of processing to determine whether updating of the printer firmware is necessary it is found that an update of the printer firmware is not necessary, a fourth determining component for determining whether an update of only printer firmware is necessary or whether an update of the printer driver and the printer firmware is necessary based on the cartridge type in the first information and the third information if as a result of processing to determine whether the update of the printer firmware is necessary it is found that the update of the printer firmware is necessary, an access component for accessing the server indicated by the URL by using the URL and transmitting printing environment information including at least one of the second information and the third information to the server if as a result processing to

determine whether updating is necessary it is found that an update of at least one of the printer firmware~~first~~ and printer driver~~second computer program~~ is necessary, and

the server comprises a third memory region for storing a second list of types of cartridges suitable for use, a fifth determining component for determining whether updating of at least one of the printer driver and printer firmware is necessary based on the printing environment information and the second list, a second transmitting component for transmitting the second list to the host apparatus if as a result processing to determine whether the updating is necessary it is found that the update of the printer driver and printer firmware is not necessary.

84. (currently amended): A method for determining whether updates are required, the method comprising the steps of:

attaching a replaceable cartridge with a memory element to an image-forming apparatus;
storing first information including a URL for the server and a cartridge type in the memory element of the cartridge;

storing second information in connection with a printer firmware~~first computer program~~ in regard to driving the image-forming apparatus and a first list of types of cartridges suitable for use in a first memory region;

storing third~~second program~~ type information in connection with a type of printer driver~~second computer program~~ in regard to driving the image-forming apparatus in a second memory regions of a host apparatus;

storing a second list of types of cartridges suitable for use in a third memory region of the server;

reading the first information from the memory element of the cartridge and the second information from the first memory region;

determining whether the cartridge type in the first information is contained in the first list;

reading the second information from the first memory region;

transmitting the first information and the second information to the host apparatus when the cartridge type is not in the list;

receiving the first information and the second information;

determining whether an update of the printer firmware first computer program is necessary based on the cartridge type in the first information and the second information;

determining whether an update of the printer driver second computer program is necessary based on the cartridge type in the first information and the third information when it is found that the update of the printer firmware is not necessary second program type information;

and

determining whether an update of only printer firmware is necessary or whether an update of the printer driver and the printer firmware is necessary based on the cartridge type in the first information and the third information when it is found that the update of the printer firmware is necessary;

accessing thea server indicated by the URL by using the URL when it is found that
update of at least one of the printer firmware and printer driver is necessary;~~stored in the memory~~
~~element of the cartridge when an update of the first computer program or the second computer~~
~~program is necessary~~

transmitting printing environment information including at least one of the second
information and the third information to the server when it is found that update of at least one of
the printer firmware and printer driver is necessary;

determining whether an update of at least one of the printer driver and printer firmware is
necessary based on the printing environment information and the second list; and

transmitting the second list to the host apparatus when it is found that update of the
printer driver and printer firmware is not necessary.